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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/015,086	12/11/2001	Jonathan J. Bernstein	112222.128	9491

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BOSTON, MA 02109

EXAMINER

ALANKO, ANITA KAREN

ART UNIT	PAPER NUMBER
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1765

DATE MAILED: 03/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/015,086

Applicant(s)

BERNSTEIN ET AL.

Examiner

Anita K. Alanko

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 1/5/06 amdt.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 22-24, 30, 37, 39-55, 57-64, 66-73 and 75-82 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 22-24, 30, 37, 39-55, 57-64, 66-73 and 75-82 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 22-24, 30, 37, 39-47, 49-55, 57-64, 66-73, 75-82 are rejected under 35

U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 22-23, 30, 37, 46-47, 55, 64, 73, the wherein clauses such as “wherein platinum and palladium are present in an amount ...to provide at least one performance characteristic at least 50% greater than either noble metal alone...” renders the metes and bounds of the claims unclear. Do these wherein clauses further limit the broad range cited in the body of the claim? For example, in claim 22, is there only a more narrow range, e.g., 10-20%, for which the wherein clause is true compared to the broad range of 1-99.9% cited in line 3?

In claim 24, the term “about” renders the metes and bounds of the claim unclear. About is a broad term, and it is unclear if this implies a range of compositions, does “about” encompass +/- 5% or +/- 10%? It may be simply deleted.

In claims 40-43, 49-52, 58-61, 67-70, 76-79, the wherein clauses such as “where the tensile strength is at least about 1000 MPa” in claim 75; “wherein the yield strength is at least about 750 MPa” in claim 77; “wherein the hardness is about 5 GPa” in claim 78; or “wherein...an electrical conductivity ...is at least 10% of the platinum alone” in claim 79 render the metes and bounds of the claims unclear. Do these specific values limit the composition to a more narrow range than that cited in the independent claims? For example, is the tensile strength

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at least 1000 MPa only for a range of 80 to 98% Pt and 2-20% Ni, or does any ratio of Pt and Ni in the alloy provide for this level of tensile strength?

Claims 39, 44-45, 53-54, 57, 62-63, 66, 71-72, 75, 80-82 fail to cure the indefiniteness of their base claims, and are therefore also rejected.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 22-23, 37, 39-45, 55, 57-64, 66-73, 75-81 are rejected under 35 U.S.C. 103(a) as being unpatentable over Franz et al (US 6,541,676 B1).

Franz discloses to form alloys of platinum, palladium, nickel, ruthenium, rhodium, gold (col.5, lines 42-44) for a free standing flexible member 17 of a microelectromechanical device. For example, as to claim 22 this comprises platinum and palladium, as to claim 23, gold and platinum, as to claim 37, platinum, rhodium and ruthenium, as to claim 55, platinum and ruthenium; as to claim 64, platinum and rhodium; and as to claim 73, platinum and nickel.

Franz does not explicitly disclose the specific alloy combinations and percentages, however it would have been obvious to choose them since Franz discloses that they are useful materials to form alloys from. In addition, since they are used for the same purpose as in the instant invention, as free-standing members, it is obvious to form them to the cited percentages, which inherently then have the cited properties since they are the same composition, in order to

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achieve materials that are capable of being free-standing and capable of being moved from one position to another.

***Allowable Subject Matter***

Claims 24, 30 and 46-54, 82 are allowable over the prior art for the reasons of record.

Claims 24, 30 and 46-54, 82 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

***Response to Amendment***

The claims remain rejected over Franz. Franz discloses free-standing metal alloys for micromechanical devices. The allowability of claims 24, 30 and 46-54 is withdrawn in view of the new 35 USC 112 rejection. The claims are newly rejected under 35 U.S.C. 112, 2<sup>nd</sup> paragraph as being indefinite. It is unclear if the wherein clauses further limit the composition.

***Response to Arguments***

Applicant's arguments filed 1/5/06 have been fully considered but they are not persuasive. Applicants argue that the membrane disclosed by Franz is not capable of movement. This is not persuasive, since the membrane, even though supported by a ceramic layer, is nevertheless free to move given a large enough pressure drop. Franz discloses that pressure drops of 5 atm are possible (col.6, line 4). Therefore, although not likely, the membrane is capable of movement (for example under very large pressure drops), as broadly cited.

As to the argument that Franz does not disclose the specifics cited in the wherein clause, this is not persuasive because if Franz suggests the composition cited in the claim, then that composition should then have the properties cited in the composition (same compositions are expected to have the same properties). If this is not the case, then the wherein clause further limits the claim in an unclear manner.

Applicant argues that Franz discloses a planar metal layer maintained in a rigid condition by a ceramic support layer. However, as noted above, the metal layer will move given a sufficient pressure drop, and is thus “capable of” movement as broadly cited.

Applicant argues that Franz discloses that the metal-based layers are weak. This argument is not commensurate in scope with the claim as the claims are not limited to layers that are not weak.

### ***Conclusion***

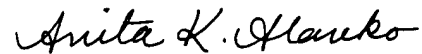
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anita K. Alanko whose telephone number is 571-272-1458. The examiner can normally be reached on Mon-Fri until 2:30 pm (Wed until 11:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Nadine Norton can be reached on 571-272-1465. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Anita K Alanko  
Primary Examiner  
Art Unit 1765